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With this issue, Health Affairs inaugurates a new section, Peer Review, which will appear occasionally, to provide a forum for the exchange of views. In this first exchange, Jacques Krasny and Ian R. Ferrier offer an alternative way of comparing U.S. and Canadian health care spending. Their report, “The Canadian Healthcare System in Perspective,” from which this essay is excerpted, was prepared for the pharmaceutical firm Pfizer Inc. Following, Dun Waldo and Sally Sonnefeld of the Health Care Financing Administration examine these authors' methodology in closer detail. Krasny and Ferrier end the exchange with their rejoinder.

A Closer Look At Health Care In Canada
by Jacques Krasny and Ian R. Ferrier

A simple comparison of U.S. and Canadian health care spending suggests that the Canadian system provides universally available health care at a lower cost than the U.S. system. Thus, it is not surprising that a number of observers have called for the United States to consider adopting Canadian-style national health insurance. However, a fair comparison of the two systems suggests that wholesale adoption of the Canadian system will not result in a satisfactory decline in U.S. health care costs.

First, a number of significant differences between the United States and Canada make it difficult to compare the percentage of gross national product (GNP) spent on health care in the two countries. Second, while Canada has achieved a slower rate of growth of health care costs, this has come with a profound limitation in access to institutional services and new health care technologies. Third, the Canadian system is made workable by a culture that accepts greater government intervention and constraint of individual rights. These cultural aspects would be generally unacceptable to U.S. citizens.

Comparisons

We make the following adjustments to avoid comparing “apples and oranges.” The analyses are intended to indicate the nature and proportion of adjustment necessary for fair comparison, not definitive numbers. Calculations throughout represent conservative, middle-ground estimates.

Capital costs. U.S. business is accustomed to perceiving health care as a system in which, as in any other business, the cost of working capital represents an expense. Hospitals, provider networks, rehabilitation facilities, insurance plans, and others must raise money either through equity markets or by raising debt in the form of bonds or other debt-financing instruments. Whether through equity or debt, individual or institutional investors expect returns when they advance these funds. By contrast, the capital structure of the Canadian health care system is largely invisible. Thus, the country’s 1,400
hospitals were created, for the most part, through a combination of one-third community (local government) contributions matched by a two-thirds federal contribution. Also, there are no real working capital needs in the Canadian system, since global budgets are advanced in a way that precludes the requirement for net cash outflows for such items as payroll and medical supplies.

However, capital does not come free in Canada. The capital cost of the health care system is largely buried in the total “financing” cost of the Canadian government. Undoubtedly, this cost contributes significantly to Canada’s substantial national debt (roughly 50 percent higher per capita than in the United States).

To determine the level and amount of capital employed by the Canadian system, we extrapolated from U.S. experience the ratio of capital employed to annual operating costs for health care institutions (67 percent). We then multiplied this by the percentage of total health care expenditures attributable to institutions (47 percent) and, using a conservative 10 percent cost of money (this is substantially below current Canadian costs), determined the net annual cost.\(^1\) This calculation suggests that total Canadian health care expenditures must be increased by 3.15 percent to allow for the cost of capital. Applying this increase to the 9 percent of GNP that was determined as the level of health spending in Canada in 1987 increases the Canadian percentage of GNP figure by 0.3 percentage points.

Health benefits. The U.S. health care system is a major employer, with labor costs constituting approximately 75 percent of all health spending. The costs of U.S. health care employers that are associated with “health benefits” are included in the operational costs of the health facilities. These costs in turn are included in the total operating costs of the U.S. health care system. In the United States, these expenses constitute a measured component of the cost of operating the health care system and are included when it is measured as a percentage of GNP. In Canada, where health costs are overwhelmingly absorbed by and paid for out of general taxation, these costs are not included in health care operating costs and thus are excluded from calculations of health spending as a percentage of GNP.

We developed an adjustment to account for differences in labor costs of health benefits. First, we analyzed federal statistics to determine the percentage of overall health spending that is made up of labor costs. We then multiplied this by 10 percent to approximate conservatively what health insurance benefits would be as a percentage of payroll. A small proportion of health benefits are absorbed in government-levied health insurance premiums in Canada (Ontario Health Insurance Program premiums account for 17 percent of total health spending). Consequently, determining the portion that is not directly charged requires multiplying the projected total health benefit by 0.83 percent (the ratio of costs not directly charged to employers and employees). The product of these numbers determines the amount by which Canadian health expenditure totals must be increased to make them comparable to U.S. costs. This figure is 6.3 percent and, when applied to the stated cost of Canadian health care as a percentage of GNP, increases this number by 0.6 percentage points.

Population mix. In comparing Canada and the United States, it is important to account for the disproportionate share of health care consumption by the elderly in the two nations. This adjustment is difficult to do, and precise data are lacking. While estimates vary, it is generally accepted that while the elderly make up just over 12 percent of the U.S. population, they account for well over 50 percent of health care consumption. In the United States, the cohort age sixty-five and over is 1.2 percent larger than in Canada (as a percentage of the population), with a resulting net impact on U.S. health care costs of 5.3 percent. That is, if the Canadian system were required to look after a population with the same demographic profile as in the United States, it would face a 5.3 percent increase in its health care costs. When this is applied to the reported 9 percent of GNP that is the cost of the Canadian health care system, it results in an increase of 0.5 percentage points.\(^2\)
Other demographic considerations also make the United States a more demanding population to serve. For example, the impact of past military actions—particularly, the Vietnam and Korea experiences—greatly increase demand for medical care. No equivalent experience exists in Canada since World War II. Inner-city phenomena such as crimes of violence, substance abuse, sexually transmitted disease, and teen pregnancy also have greater impact on health costs in the United States than in Canada.

Research and development. Whether research and development (R&D) expenditures should constitute any part of the calculation of current health spending is arguable. One perspective is to consider R&D expenditures as investments since these expenditures have nothing to do with satisfying current health care demands. If all of the differences in health spending as a percentage of GNP between the United States and Canada were accounted for by expenditures on R&D, it is unlikely that many voices in the United States would argue for “closing the gap” by eliminating U.S. health care research. However, both countries elect to include R&D expenditures in health care GNP calculations.

We examined the absolute dollar expenditures for R&D in the United States and Canada as a ratio of respective health spending. This analysis indicates that, if Canada were to spend proportionally as much on health R&D as the United States spends, it would face a 2.4 percent increase in health expenditures. When this is applied to the reported 9 percent of GNP that is the cost of the Canadian health care system, it results in an increase of 0.2 percentage points.

Adjusted comparison. The combined net impact of these adjustments is significant. They increase the Canadian amount from 9 percent of GNP to 10.6 percent, converting an apparent advantage of 2.1 percent of GNP reported by the Canadian health care system to a difference of 0.5 percent. They do not, however, take into account additional factors that increase the costs of the U.S. health care system. For instance, we did not adjust for (1) the large number of U.S. Vietnam veterans; (2) the inner-city phenomena of more intense urbanization in the United States; (3) the substantially greater cost of malpractice liability and insurance in the United States than in Canada; (4) substantial hidden administrative costs of the Canadian health care system that are absorbed into general, federal, and provincial government expenditures (the government system collects the revenue, through both general taxation and direct health premiums, and administers the programs but does not allocate the costs associated with these administrative functions back to health care revision); and the significant but currently unmeasured use of the U.S. health care system by Canadian citizens. Each dollar spent by a Canadian in the United States has the numerical impact of appearing to increase the cost of the U.S. health system (since total expenditure is measured) and to decrease the apparent cost of the Canadian health system (by reducing expenditure in the system). Given the intensely conservative nature of our adjustment components, more sophisticated numerical analysis would likely yield the result that the Canadian system costs as much as, or slightly more than, the U.S. system.

Access and insurance. A dimension of the Canadian health care system that is generally described as superior to the U.S. system is its universal coverage of the population. It is important to distinguish between health care and health insurance. Universal access to health care is the ability of all the population to obtain stated levels of medical intervention. Universal access to health insurance (health care benefits) deals with paying for these services.

While approximately thirty-one million U.S. citizens are without health insurance (health care benefits) at any given time, this does not mean that this entire group is denied access to health care. Many in the United States receive needed care, whether or not they have insurance coverage (although needed care may be less than they want). Hospitals, municipal and state governments, charities, and other agencies absorb the costs of these unreimbursed services. Charges are shifted to those patients with insurance, or, in the case of publicly

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funded facilities, financial deficits are made up through general tax funds. The absence of health insurance for this numerically significant cohort, while not resulting in the denial of required medical services, comes at a profound price. The uninsured recipient of health care is required to spend personal funds, becoming indigent before these services are provided free through one of the agencies or mechanisms described above. In Canada, it is a fundamental tenet of the Canada Health Act that all residents are covered by the various provincial health plans. While health insurance is universally provided, access to care itself is limited.

Shortcomings Of Canadian System

One demonstrable benefit of the Canadian health care system has been its ability to control the rate of growth of health costs, particularly when compared to recent experience in the United States. However, this benefit has come at the substantial price of limited access to resources, services, and new treatment regimens and technologies.

Cost containment. While Canadian health care costs have been rising as a percentage of GNP, this rate of growth has been slower than that in the United States. However, adjusting for cost of capital, health labor, health insurance benefits, R&D, and demographics shows a different picture of cost containment “success” in Canada.

Canadian health spending in the 1960s was characterized by a period of relatively free spending (Exhibit 1). At that time, the legislation surrounding the Canada Health Act granted provincial governments fifty cents on the dollar for all health expenditures. This enabled the provincial health ministries to spend relatively cheap dollars on health care with the political benefit of providing highly visible community activity and selectively creating jobs in jurisdictions where social or political considerations indicated the need. Recognizing the fiscal consequences of this legislation, the federal government in Ottawa instituted cost containment procedures in the 1970s. No longer were fifty-cent dollars available to

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**Exhibit 1**

Health Care Costs As Percentage Of Gross National Product, United States, Canada, And Canada Adjusted, 1960–1987

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Sources: Health, United States, 1989, Table 100; National Health Expenditures in Canada, 1975–1987 (Health and Welfare Canada, unpublished report), Table 6; and adjustments by the authors.

Adjustment of Canadian GNP figures adds 1.6 percentage points to reflect a fair comparison between Canada and the United States in the areas of (1) cost of capital; (2) health benefits and health care-related costs of labor; (3) different emphases on research and development; and (4) population mix, especially regarding number of elderly citizens.
the provincial governments of Canada. Instead, the funding provided to provincial governments now became pegged to growth of the Canadian economy.

As a consequence, the provincial health ministries faced a significantly reduced formula for securing matching health funding from the federal government while having to deal with provincial health care providers that had grown accustomed to relatively easy funding. The 1970s represented a period of rigorous management control in Canadian health care that resulted in removal of fiscal softness and lax management in the Canadian system. For example, early versions of global hospital funding had the perverse incentive of rewarding hospitals that provided minimal acute medical care but allocated a high proportion of their activities to “hotel days” (simply looking after the basic human needs of patients without providing any substantial medical intervention). Provincial health management could legitimately argue that costs were being contained without fundamentally impairing quality of care as these reverse anomalies were corrected and the system was made more efficient.

By contrast, the 1980s represented a troublesome era for health care in Canada. The bulk of cost constraint now accomplished in Canada comes at the direct expense of accessibility of health care resources and new medical procedures and technologies.

Resource constraint. Perhaps nothing illustrates the problem of resource constraint in Canada so dramatically as the comparison of access to higher technologies between the United States and Canada. The per capita ratio of accessible higher (or newer) technology resources between the United States and Canada ranges from 200 to 800 percent. The comparison of the availability of these resources is not a commentary on what the absolute level of resources should be for a population, given a specific medical need or indication. Rather, it highlights the important principle that people clearly have greater ease of access, a larger range of choices, and more timely access in the United States than in Canada.

Management skill. While there are pockets of management genius in the Canadian health care system, the system is not managed in an effective manner, particularly when compared to U.S. models. Ironically, while examination of the Canadian system has recently become topical in the United States, Canadians are studying U.S. models, particularly health maintenance organizations (HMOs).

While the fundamental economic support and character of the Canadian health care system derives from the federal government, the Canadian system is, in fact, a collection of ten distinct provincial plans. Ten Canadian provinces have a population base of one million or less. By comparison, seven HMOs in the United States each provide health care services to an enrollment of over one million subscribers. With the exception of the Ontario and Quebec programs, the Canadian system has no programs or insights on economies of scale to offer U.S. providers that can serve as templates for amortizing costs of care across large population groups. Moreover, examination of discrete, large-volume health care systems (considering the entire Canadian experience as one) demonstrates that U.S. managed systems designed to control costs in fact do so far better than the Canadian system. In 1987, three of the larger U.S. HMOs provided a full range of health care services with per capita cost on the order of $900 to $1,000. By contrast, the provision of the same services in Canada involved per capita cost of approximately $1,400 (U.S.).

Cultural Issues

Meaningful comparisons of the cost of different health care systems must correct for a variety of differing social factors. Canada and the United States appear to be culturally similar. However, social attitudes toward the direct authority of government in everyday life and individual rights are substantially different. Canada has never experienced a revolution, evolving gradually from a colonial into a democratic society. Canada has kept many of the centralized characteristics of the colonial administration from which it grew. It uses a parliamen-
tary form of government exported from Great Britain and continues to have a nominal monarch as its head of state—although it now elects Her Majesty’s government.

These cultural differences affect the consumption of health care by creating limitations on individual rights, which would be generally unacceptable or even culturally repugnant to most U.S. citizens. For example, Canadians wronged by a medical practitioner do not have access to punitive damages since, for all intents, none are awarded by Canadian courts. There are no contingent legal fees in Canada; consequently, those wishing to pursue legal remedy must have the necessary financial resources at hand. With minor exceptions, there are no class-action suits. Consequently, there is no mechanism for pursuing legal remedy in situations in which large numbers of people have been wronged. There is no right to sue government officials, or ministries of health, for medical negligence. Indeed, there is no right to sue the Canadian government without first obtaining permission from the government to do so.

Also, there is portability of the health care system within Canada, but the provincial systems are variations of the same basic health care delivery system available throughout the country. There is no effective choice of which system to use. Finally, there is no real ability to opt out of the public system and find alternative avenues for care.

In some respects, the accessibility to U.S. health care enables the Canadian system to cope with demand. The United States is the principal source of new medical technologies for Canada. It is, for an increasing number of Canadians, the only available source of prompt access to advanced medical technologies and procedures. If the United States were to adopt the Canadian health care system with its limitation of resources, it would not only affect the availability of resources to U.S. consumers but would also remove the “safety valve” for Canadians.

**Satisfaction Of Citizens**

A recent Harris poll showed that the overwhelming majority of Canadians prefer their system to the U.S. or the British systems (by 95 percent and 91 percent). By contrast, more than 60 percent of U.S. citizens indicate that they would prefer the Canadian system to their own. Clearly, some attributes of the Canadian system make it popular with Canadians and appealing to Americans and Britons.

Undoubtedly, the first and most significant characteristic is that Canadians live secure in the belief that a catastrophic medical event will not be compounded by a financial catastrophe. Canadians routinely read about U.S. citizens left destitute by major health calamities. Another important element that has contributed to the perceived success of the Canadian health care system has been its ability to recruit popular support by coopting community opinion leaders.

While the Canadian health care system is showing signs of strain, the continued overall satisfaction of Canadians with their system reflects their perception that scarce resources have been allocated in a manner sensitive to community needs and that they are financially risk free. In marked contrast to the situation in the United Kingdom (where formalized community involvement ultimately proved to be a procedural impediment), Canada seems to have succeeded in involving the community. Each province has determined its own way to decentralize the decision-making process. Smaller provinces have adopted planning methods that are compatible with their methods of provincial decision making and that reflect the diversity of their population base and scarcity of communities.

Of perhaps more importance is the fact that these various bodies deal with the issue of finite resources, and the competing demands for them, at the beginning phase of a budgeting and planning process, when the decisions are still in their hands. Consequently, when crises do emerge, negative public opinion can be legitimately countered by the understanding that resource priorities were established by public decision rather than through a central bureaucracy or through heartless and invisible market forces. For example, lack of acute care beds
is made more acceptable when elected leaders and the citizens they serve recall the choice that was made to make additional funds available to long-term care and home care programs rather than acute care beds. The Canadian health care system does not operate less expensively or more effectively than the U.S. system. The Canadian mechanism for funding health care does constrain expenditure effectively. However, it comes at the price of limiting access to resources and technologies. This results in decreased accessibility to medical procedures and the use of procedures that are substantially inferior. The domestic and international popularity of the Canadian system stems largely from the perception that there is a safety net against the financial consequences of medical catastrophe. It is also a measurement of the effectiveness of a politicized system that enjoys sensitive community-based involvement in making difficult health resource trade-offs.

Moreover, this system can be executed only in an environment that would be legally and culturally unacceptable to U.S. citizens. What Canada offers U.S. health planners are important insights into the efficient proactive involvement of stakeholders in its resource rationing decisions and the tremendous popula value of a safety net against the financial consequences of medical catastrophe.

NOTES

1. Ratio of Canadian government cost components used to determine total health care costs.

2. The population base of the “old-old” (those age eighty-five and older) further highlights this disparity in populations. While the ratio of those age sixty-five and over for Canada is 12.2 percent versus 11 percent (or a 10 percent difference in ratios), the ratios of those age eighty-five and over is 1.18 percent versus 0.89 percent (a ratio difference of 33 percent). While the comparative size of this “old-old” group is small, the proportionate demand and impact on the health care system is exceptionally large. Since the universally accepted definition of elderly is over age sixty-five, there are very few data to determine the net impact of the difference of the ratio of those age eighty-five and over. However, since in both cases Canada has a relatively younger population, the two cohort comparisons can be considered as indicating the same basic reality.

3. This amount is as important as it is difficult to determine. For example, the Department of Veterans Affairs (VA) designates approximately 20 percent of its patients as “Vietnam-era veterans” (those who served between 1964 and 1975, but not necessarily in Vietnam). While the 1990 VA budget is $12.3 billion, it is unlikely that a straight prorating of 20 percent of this cost would be attached to Vietnam veterans. As in the population at large, health care costs are disproportionately skewed to the elderly, and the Vietnam veterans have not yet entered the “senior” category. A recent study by the Centers for Disease Control that examined 15,000 veterans concluded that Vietnam veterans were substantially more prone to problems of alcohol abuse or dependence, clinical depression, and general anxiety. To quote William Eaton, a psychiatric epidemiologist at The Johns Hopkins University, “Vietnam raises the risk of enduring psychological problems by a factor of 2.5.”

4. An examination of the methods used by the Canadian federal government in calculating health expenditure to determine the percentage of GNP indicates no allowance for the expenditures of Canadians for health care outside of the country. Rather, expenditures are segmented into categories, then each category’s cost is determined by combining payment to it from the various levels of government. Provision is made for private-sector (insurance companies and individuals) participation in the system by balancing the difference between total revenues of each component and the funding made available through documented public sources. That is, the private-sector expenditure is the “plug figure” used to balance the equation. The very few totally private situations in Canada that would attract international clientele (such as the Shouldice Clinic in Toronto) are not measurable by these methods, since private concerns are not required to disclose revenue figures. Moreover, since no public funding whatsoever is provided, there is no reason for measuring these mathematically small phenomena. While Americans do undoubtedly end up using the Canadian health system (because of illness or accident while visiting Canada), there is little reason to believe there is any usage other than that caused by these unforeseen events. There are neither insurance, access, nor technological incentives to persuade any American to ever use Canadian facilities. By contrast, availability of high technology, rapid access, and world-renowned physicians establish both a clear motivation and a regular trail of Canadians to the American health system. Since expenditures by Canadians on health care in the United States are not (in the overwhelming majority of cases) reimbursed by Canadian provincial health care plans, they go largely unmeasured.